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The EU Water Framework Directive – Challenges, Gaps and Potential for the Future

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Abstract:

This article assesses the progress of the European Union's Water Framework Directive from a legal and policy perspective. Emerging judgments from the Court of Justice of the European Union are providing new clarity, for example on cost recovery for water services and the application of the 'no deterioration' principle. The article reflects on transposition, especially in the UK; analyses several aspects that have been especially challenging, for policy-makers, regulators and water users; and identifies some missing elements. Challenges include the meaning of 'good status' and the derogations to achieving the same; the article will suggest that the derogations are needlessly complex, and that 'good status' as a binding obligation has had unintended consequences. Absent from the text currently is provision for drought, climate change and ecosystem services, and it concludes that each of these could usefully be part of the Commission's review in 2019.

Key words: Water Framework Directive; water law; river basin planning; ecological status; ecosystem services.

1 Introduction

The European Union's (EU) Water Framework Directive[1] (WFD, the Directive) has been a transformative instrument for policymakers, regulators, water scientists and water users. It brought in an EU-wide framework for Integrated Water Resource Management (IWRM) via six-yearly River Basin Management Plans, and in addition, a system for ecological classification, with an aspirational objective of 'good ecological status' by 2015. This

* My thanks to Professor Colin Reid and Professor Andrea Ross, for their comments on the draft; and to the reviewer. All errors, of course, remain my own.

[1] European Parliament and Council Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD) OJ L 372/1.

objective placed the WFD at the forefront of international efforts to recognise the holistic nature of managing (aquatic) ecosystems, and has driven work in the policy arena but also in the water sciences, especially hydrology and aquatic ecology.

The 2015 'deadline' had some flexibility, based around, on the one hand, a series of (political and socio-economic) derogations, and on the other, a parallel system of objectives for Artificial and Heavily Modified Water Bodies (AHMWBs). The derogations allow extensions or exemptions to the objective, for two further rounds of River Basin Management Plans (RBMPs), for reasons of technical infeasibility, disproportionate cost and sustainable human use. The parallel system recognises the specific requirements of the AHMWBs, which should achieve their best ecological 'potential' (section 3.4 below).

The second round of RBMPs were published in December 2015.[2] Ongoing review by the European Commission has identified numerous problems with implementation, and the Court of Justice of the European Union (CJEU) is now beginning to issue relevant judgments. Meantime, criticism has been levelled at the WFD by the science communities, especially the approach to ecological classification; indeed the Directive has been the subject of extensive academic and practitioner debate across many disciplines since its inception.[3] This article will reflect on implementation from a law and policy perspective, in the UK jurisdictions, especially Scotland, and comparatively. Part 2 will briefly address transposition and the early stages of implementation. Part 3 will look at some key elements of the Directive that may not have worked as well as intended; and Part 4 will look at related policy areas that are not, but perhaps should be, part of a revised WFD. It will conclude by looking forward, to what changes might be made in the 2019 review to make the Directive more effective.

2 Early Stages

The WFD has been contentious since its inception. The initial proposal in 1988[4] was followed by almost a decade of discussion, widening the scope, before the Commission's

[2] See http://ec.europa.eu/environment/water/participation/map_mc/map.htm
[3] *B. Bouef and O. Fritsch* Studying the implementation of the Water Framework Directive in Europe: a meta-analysis of 89 journal articles, Ecology and Society 2016 21(2):19 http://dx.doi.org/10.5751/ES-08411-210219
[4] European Council (1988) Resolution OJ C 209, 9.8.1988.

final proposal.[5] It took a further three years to agree, including an amended proposal to include the text of Annex V;[6] and an eleventh-hour conciliation process, resulting in an 'opt-out' to Article 9 on full cost recovery for water services.[7] The 1997 amendments indicated that Member States wanted further detail on how ecological classification would work; and also recognised that ten years was an inadequate time to implement river basin planning and achieve good status. Nonetheless, on 23 October 2000 the WFD was finally agreed.

2.1 Transposition and 'Gold Plating' - the UK jurisdictions

The transposition of the WFD in Scotland could be described as a happy confluence of necessity and enthusiasm – a crying need for reform of neglected areas of law following the establishment of the Scottish Parliament in 1999, of which water was only one, and a wider enthusiasm for addressing environmental issues in a positive and proactive way.[8] The Water Environment and Water Services (Scotland) Act 2003 (in this section, the Act) was on the statute books in spring 2003, nine months before the December deadline.[9] In England and Wales, by comparison, the Directive was implemented by regulations at the last possible moment,[10] in accordance with the time-honoured minimalist approach to EU law in the UK (but not in Scotland following devolution).[11] Similarly, although the UK Parliament maintained its approach of copy-out, and avoiding 'gold-plating' directives, the Scottish Parliament did legislate for some additionality. The Act applied the domestic 3 mile limit for discharges into coastal waters to all new controlled activities under the WFD; included wetlands (though not peatlands) in the definition of 'water environment'; and mandatory sub-basin plans, which are mentioned but not required under the WFD. The Act and its implementing regulations[12] also made a comprehensive review, repeal and reconstruction of

[5] European Commission (1997a) Proposal for a Council Directive establishing a framework for Community action in the field of water policy, COM(97)49 final.
[6] European Commission (1997b) Amended proposal for a Council Directive establishing a framework for Community action in the field of water policy, COM(1998)76 final.
[7] On the process, *M. Kaika & B. Page*, The EU Water Framework Directive: Part 1. European Policy-Making and the Changing Topography of Lobbying, Eur. Env. (2003) 13(6) 314-327.
[8] For a fuller account of the background and context to the Scottish reforms, see *S. Hendry*, Enabling the Framework: the Water Environment and Water Services (Scotland) Act 2003, Journal of Water Law 2003 14[2003] 16.
[9] Water Environment and Water Services (Scotland) Act 2003 asp.3.
[10] Water Environment (Water Framework Directive) (England and Wales) Regulations SI 2003/3242.
[11] *A. Ross, H. Nash & C.T. Reid*, The implementation of EU environmental law in Scotland Edinburgh Law Review 2009 13(2) 224-251.
[12] Water Environment (Controlled Activities) (Scotland Regulations SSI 2005/348, now SSI 2011/209.

the historic law relating to water resource management in Scotland. They implemented comprehensive abstraction licensing (required by the Directive, but not then in effect in Scotland), rewrote the law on pollution control (compliant with the *acquis* of EU water law, but badly out of date) and established an integrated and proportionate system for authorising all water uses ('controlled activities'), including river works and impoundments, in line with best international practice.

2.2 Engagement, Engagement, Engagement

Stakeholder participation has been a key element of the global drive for Integrated Water Resource Management (IWRM), usually through river basin planning,[13] and the EU WFD has been no exception. The participation provision is couched in fairly general terms,[14] but does prescribe mandatory time periods within which wider public consultation should take place. The Common Implementation Strategy (CIS)[15] has provided many good practice examples of how this participation can be done, given the problems of scale; Bouef and Fristch note that participation has perhaps been over-analysed, compared to other areas that remain under-researched.[16] In Scotland, with the benefit of a small jurisdiction, the first round of River Basin Management Plans (RBMPs) established Area Advisory Groups, mapping to eight sub-basins in the Scotland River Basin District and two in the Solway-Tweed. In England and Wales, in the first round of river basin planning, the Stakeholder Advisory Groups for the eleven River Basin Districts reflected the (generally) much larger population scale and were perceived as remote by water users on the ground, leading to a revised approach for the second round of RBMPs.[17] Howarth noted the procedural innovation, but also that the technical aspects of the Directive are not easily conveyed to a lay audience, or indeed to water users without specialist scientific understanding – there is a

[13] See, e.g., UNESCO (2009) IWRM Guidelines at River basin Level http://www.gwp.org/Global/ToolBox/References/IWRM%20guidelines%20at%20river%20basin%20level%20-%20Part%201.%20Principles%20(UNESCO,%202009).pdf accessed 29/08/2017

[14] WFD, supra note 1, Article 4.

[15] Now available through the CIRCBAC Environmental Information Platform; see http://ec.europa.eu/environment/water/water-framework/iep/index_en.htm

[16] *Boeuf & Fritsch*, supra note 3.

[17] DEFRA (2013) Catchment Based Approach: Improving the quality of our water environment https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/204231/pb13934-water-environment-catchment-based-approach.pdf

tension between the science and the engagement.[18] This became very clear in the UK jurisdictions when the UK-wide Technical Advisory Group (UKTAG)[19] began to produce the documents that defined 'good' status (Part 3 below). These were technically very complex, and also (for the most part) applied uniformly across the UK jurisdictions, despite the very different approaches to transposition and indeed to stakeholder work.

2.3 Boundaries and Transboundaries.

The WFD is organised around river basins, rather than pre-existing administrative units; river basin planning is at its heart. In the UK, we have little in the way of transboundary waters, though there are international RBDs crossing the Irish border.[20] There are also cross-border, but internal, waterbodies in the Solway and the Tweed, and across the English-Welsh boundary, with institutional arrangements for 'lead' authorities. But barring further constitutional upheaval in the UK, these are not arrangements between different states. In most of the world, that is not the case, and, under the WFD much of mainland Europe will fall into an International RBD;[21] the management of transboundary waters brings complex questions of law.

The great European rivers cross many borders – the Danube has 19 states within its catchment, whilst the Rhine has nine. Indeed the accession of the EU to the Danube Treaty[22] caused a challenge by Spain[23] which indirectly determined the question of the legal basis of the WFD itself (and see further, Part 4 below). Also when the WFD was in development, the accession of the EU to the Helsinki Convention[24] was a specific driver for bringing in river basin management. Both the Danube Treaty and the Helsinki Convention include many EU

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[18] *W. Howarth*, Aspirations and Realities under the Water Framework Directive: Proceduralisation, Participation and Practicalities. JEL (2009) 21:3 doi:10.1093/jel/eqp019

[19] See http://www.wfduk.org/

[20] On the coordination of these, see *K. Murphy & G. Glasgow*, North–South Coordination in Ireland's International River Basin Districts. Proceedings of the Royal Irish Academy, 2009 Vol. 109B, No. 3, The Water Framework Directive and Ireland (November 2009), pp. 139-150 Published by: Royal Irish Academy (online) http://www.jstor.org/stable/20694889

[21] WFD, supra note 1, Art.3.

[22] International Commission for the Protection of the Danube River *Convention on Cooperation for the Protection and Sustainable Use of the River Danube*, Sophia, 1994, in force 1998.

[23] *Kingdom of Spain v Council of the European Union*, 2001, Case C-36/98.

[24] UN Economic Commission for Europe *Convention on the Protection and Use of Transboundary Watercourses and International Lakes,* Helsinki, 1992, in force, 1996.

Member States and some third party States, as do other bilateral and regional treaties on transboundary waters across the EU.[25]

It may be in part because of the transboundary dimension that the focus for analysis of the WFD, at least by legal academics, is different on mainland Europe from the UK jurisdictions. Dutch legal scholars, for example, have written extensively, not just on implementation in Dutch domestic law but drawing comparative lessons.[26] These and other comparative analyses seem to reflect both the transboundary element and water's cross-cutting nature, for example links between the WFD and the management of land use, agriculture and climate change. All of these have particular implications for transboundary water management; but more generally they are all policy areas that may not be well-reflected in the WFD as it stands. We will return to these in Part 4, but will first explore some features which are integral to the WFD, but which have caused significant difficulty in interpretation and implementation.

3 Challenges of Implementation

3.1 Objectives, Targets and Goals – Obligations of Result?

The purposes of the WFD are, *inter alia,* to prevent deterioration, protect and enhance aquatic ecosystems, and promote sustainable water use.[27] The objective is 'good ecological status' (however that may be defined) and (in the English text) Member States must 'aim to achieve' this in the first place within 15 years of the entry into force.[28] Exceptions can be created through derogations under Article 4, including extensions of time and less stringent

[25] See, for a comprehensive analysis of the management of the EU's transboundary waters, *T. Zamparutti et al*, Comparative Study of Pressures and Measures in the Major River Basin Management Plans Task 1 Governance Final Report Part V http://ec.europa.eu/environment/archives/water/implrep2007/pdf/Governance-Pressures%20and%20measures.pdf

[26] *H.F.M.W. Van Rijswick*, Mechanisms for Water allocation and water rights in Europe and the Netherlands – Lessons from a general public law perspective, Journal of Water Law, 2015(24) 141-148.
H.F.M.W. Van Rijswick, Trans-jurisdictional Water Governance in the European Union, in *J. Gray, C. Holley & R. Rayfuse* (eds.), Trans-jurisdictional Water Law and Governance 2016 Earthscan / Routledge London / New York.

[27] WFD, *supra* note 1, Article 1.

[28] WFD *supra* note 1, Article 4; and see *J.J.H van Kempen*, Countering the Obscurity of Obligations in European Environmental Law, JEL 24(3) 2012, 499-533 on the differences between the texts in several languages.

objectives, on grounds of technical feasibility, disproportionate cost and sustainable human development needs. Another set of exceptions relate to artificial and heavily modified waterbodies. Both the meaning of 'good' and the use of the exceptions will be explored below. But an interesting question, especially as we move through the second cycle and as the European Court of Justice starts to issue substantive decisions, is whether the obligation to 'aim to achieve' has any legal force at all.

The Directive has many obligations of process, clearly specified and capable of enforcement - to create a river basin plan by a certain date, or to issue documents for consultation within a certain timeframe. More difficult to analyse, and to enforce, are the substantive requirements - to achieve a determinate outcome, such as an ambient water quality standard, or a specified level of ecological status. European lawyers, immersed in civilian systems, analyse these in terms of obligations of best effort, or of result – the latter with binding effect. Van Kempen explored Article 4 in depth and concluded it should be classified as an obligation of result;[29] Keessen et al, in an analysis of practice in eleven Member States, found that the majority of decision-makers agreed, or at least, 'probably' so.[30] Yet it is still couched in weak terms; my law students can tell me that 'aiming to achieve' something might require evidence of willingness, or endeavour, but it is not the sort of imperative readily enforced by a court. Perhaps more importantly, whatever the class of legal obligation, where the content of the result is itself complex and difficult to measure, it will be hard to enforce. The meaning of 'good ecological status' is surely so.

3.2 What is 'good'?

Lawyers spend time studying concepts related to goodness (for example, 'natural justice')[31] – is our understanding of it universal? Is it innate? Do we always know it when we see it? All of these questions can equally be applied to good status in a waterbody; and the answers might (in both cases) be 'No'; 'Possibly'; and 'We [each of us] thinks so [but in fact

[29] *J.J.H. van Kempen*, *supra* note 28.
[30] *A.M. Keessen* et al, European River Basin Districts: Are They Swimming in the Same Implementation Pool? JEL 22:2 (2010), 197-221
[31] See, for a 'water' perspective on jurisprudence, *M. Neal & P. Wenz*, Water Justice: Understanding the Philosophical Underpinning of Decision-Making in the Context of International Water Governance in *A. Rieu-Clarke, A. Allan & S. Hendry* (eds.) Routledge Handbook of Water Law and Policy, 2017, 326-338.

we may not agree]'. The WFD deals with universality by a process of intercalibration[32] which is inevitably imperfect, but which seeks to make results of analyses comparable over state and river basin boundaries. It deals with the other questions by providing a framework for analysis of the components of 'good', which states or competent authorities must further refine into enforceable regulatory standards, at national or river basin level.

Annex V sets out these components of ecological status, for surface waters. These include hydrology - a sufficient flow (or water level, for lakes); morphology - a sufficiently 'natural' physical structure, not canalised or otherwise modified; and chemistry - compliance with all chemical standards (priority substances and other specific pollutants, and physico-chemical elements such as temperature and alkalinity). Each of these will supplement the biological assessment as to whether there is an appropriate range of flora and fauna, by comparison to a reference waterbody for that ecotype. Even if the reference body does exist, we are deluding ourselves to think that there is a 'static' picture of a healthy ecology, at any time, let alone in the Anthropocene. [33] From a legal perspective too, the biological assessment is the most problematic; Joseffson and Baaner argue that ecological status is not best measured by quantifying the biology.[34]

Further, although some chemical standards are set at EU level in the Priority Substances Directive,[35] every other component of this analysis must be defined in detail and in context – what flow level is sufficient for a spawning salmon river?[36] In the UK, this detail – the technical expression of 'good' – was determined by the UKTAG and applied broadly uniformly across the UK jurisdictions, albeit in different instruments.[37] These Directions are

[32] WFD, supra note 1 Annex V; European Commission (2013) Decision establishing the values of the Member State monitoring system classifications as a result of the intercalibration exercise (2013/480/EU).
[33] See, e.g., *B. Moss,* The Water Framework Directive: Total environment or political compromise? SciTotEnv 400 (2008) 32-41; *T. Hatton-Ellis* (Editorial), The Hitchhiker's Guide to the Water Framework Directive, Aquatic Conservation: Marine and Freshwater Ecosystems 2008 18: 111–116.
[34] *H. Joseffson & L. Baaner,* The Water Framework Directive: A Directive for the Twenty-First Century? JEL 2011 23:3 doi:10.1093/jel/eqr018
[35] Directive 2013/39/EU of the European Parliament and Council of 12 August 2013 on priority substances in the field of water policy OJ L 226/1
[36] See, on flow regimes and the WFD, W. Howarth, Going with the Flow: Integrated Water Resources Management, the EU Water Framework Directive and Ecological Flows *Legal Studies* 2017 (in press).
[37] DEFRA (2014) Water Framework Directive Implementation in England and Wales: New and Updated Standards
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/307788/river-

binding on the regulators, who should then aggregate them, to determine the class of each waterbody; and apply them to water users, by amending licence conditions over time, in order to achieve the programmes of measures for the relevant waterbodies and thus bring those waterbodies, if failing, up to 'good'. On paper, a nice system, closing loops; but dependent firstly, on the individual components being properly established; secondly, on licence reviews and subsequent enforcement being effective; and thirdly, on the effect of the various exceptions applied at different levels.

3.3 Should 'good' be an obligation?

The establishment of good status as a binding obligation is unusual, perhaps unique. Most states have brought in IWRM processes,[38] and many have ecological classification systems;[39] these may have legal force.[40] But ecological status is a complex concept, as is the underpinning science, and therefore challenging as a binding norm. Further, the science is constantly developing – but the law tends to rigidity, and is a reactive force. The WFD has required much investment in water management, including hydrology and aquatic ecology, to the benefit of the science community, but decision-makers have struggled to adapt to the iterative findings of the scientists. Baaner has suggested that the whole approach to classification under Annex V should be reviewed in 2019 to reflect the non-linearity of ecological function, and that would be one way forward.[41] But it is also questionable whether the current obligation in Article 4 is the best way to avoid deterioration and protect the resource. Arguably, without an obligation, Member States would have devoted much less resource to the WFD. But it is also arguable, that instead, the result has been that Member States have devoted their attention and (increasingly scarce) resources to finding grounds for derogations, to justify failure. In 2010, Hering et al noted that data collection had proceeded well, but restoration less so.[42] There might have been a better IWRM process if there had

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basin-planning-standards.pdf; Scottish Government (2014) The Scotland River Basin District (Standards) Directions 2014 http://www.gov.scot/Publications/2014/08/6532

[38] UN Water (2012) Status Report on The Application of Integrated Approaches to Water Resources Management http://www.unwater.org/

[39] See e.g. in Australia and New Zealand, ANZECC / ARMCANZ (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*
http://www.agriculture.gov.au/water/quality/guidelines

[40] See, e.g. in South Africa, National Water Act 1998 n.36 ss. 12-15.

[41] *L. Baaner,* 'Good ecological status of surface water' – Technical Provision or Legal Norm? (2011) Institute of Food and Resource Economics, University of Copenhagen.

[42] *D. Hering* et al The European Water Framework Directive at the age of 10: A Critical Review of the

been less focus on (avoiding) the objective, and more on an honest appraisal of the problem, and the appropriate management priorities.

3.4 Artificial, Modified or Derogated – Should we make an exception?

It is unsurprising that there is provision for states to fail to reach 'good' status, by 2015 or in some cases at all. What is troubling is the complexity of the exceptions, and perhaps, their overlapping nature.

On the one hand, there are exemptions and extensions in Article 4. The achievement of 'good' in a waterbody may be extended to the second or third cycle, with the reasons set out in the RBMP along with the measures that will be required. In Scotland, the data sheets produced for every waterbody in the first round established the measures for 2021 and 2027 as well as for 2015.[43] Where 'good' is unlikely to be achieved by 2027, instead the Member State may exempt the waterbody indefinitely, by setting a 'less stringent objective';[44] again, explicit in the RBMP. In 2012, the Commission noted that in the first round, most States had (unsurprisingly) utilised extensions rather than exemptions.[45] There are two further exceptions; temporarily, for 'natural cause or *force majeure'*,[46] and for 'new sustainable human development'.[47] Article 4 is notoriously hard to construe, but clearly gives Member States a degree of flexibility. This was always going to be necessary – although we should resist describing these provisions as 'alternative objectives'. The objective is good status, and these are exceptions.

In addition, a waterbody may fail to achieve 'good status', where it is defined as artificial or heavily modified. The AHMWBs should achieve 'good ecological potential', by meeting the criteria for similar unmodified waterbodies as far as possible, given the nature of the modification or design.[48] In many ways this makes perfect sense. A reservoir or canal, for example, may be artificially constructed, yet still meet almost all the criteria for a good status

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Achievements with Recommendations for the Future, SciTotEnv 408 (2010) 4007-4019

[43] See http://www.environment.scotland.gov.uk/get-interactive/data/water-body-classification/ for interactive maps linking to the targets and measures for each waterbody. These were revised for the second round.

[44] WFD supra note 1 Article 4(5).

[45] European Commission (2012a) European Overview (Vol.2) on the Implementation of the Water Framework Directive (2000/60/EC) River Basin Management Plans SWD(2012) 379 final.

[46] WFD supra note 1 Article 4(6).

[47] Id. Article 4(7).

[48] WFD supra note 1, Article 4 and Annex V.

waterbody. Yet there is room for overlap or confusion. Annex V sets out the criteria for assessing ecological status and this includes hydrology and morphology – the very factors that are most relevant to the designation of many AHMWBs. When States choose to designate, the requirement to meet good status is obviated. By contrast, where states do not designate, there may well still be impacts, especially around morphological alterations, which do affect the status class and which may cause the waterbody to fail. Hence there is an incentive to States to designate as AHMWBs, necessitating extensive guidance around designation.[49] Otherwise, States will either need to carry out work, or argue for one of the exceptions in Article 4. Furthermore, the Commission takes the view that after the first RBMPs, any future AHMWBs should not be designated, but rather should be justified as 'sustainable human development' under Article 4(7).[50]

It is arguable therefore that this dual approach was an unnecessary additional complexity. The same result could be achieved by recognising that a wider subset of waterbodies would require a less stringent objective under Article 4(5). It has to be questioned whether the whole presumption around the obligation to reach good status, weakly expressed, and surrounded by two different, both complex, ways to avoid it, has been the best way to protect our waters.

3.5 Prices, Costs and Economic Tools

Economics, and economic tools, are relevant to the WFD process in two ways. One is around the relative cost-effectiveness of measures, as the grounds for the exceptions in Art.4 include 'disproportionate cost'. The other is the desirability of pricing water appropriately, to provide incentives to users under Article 9. Relevant to both are the value(s) of the water resource, and the cost of environmental externalities[51] as well as extensive guidance through the Common Implementation Strategy.[52] The Commission has criticised the approach of

[49] European Commission (2003a) *CIS Guidance Document No.4 Identification and Designation of Heavily Modified and Artificial Water Bodies* http://ec.europa.eu/environment/water/water-framework/facts_figures/guidance_docs_en.htm

[50] European Commission (2012a), supra note 43, section 8.6.

[51] See, e.g., *N. Hanley* et al Estimating the Economic Value of Improvements in River Ecology using Choice Experiments: an Application to the Water Framework Directive, Journal of Environmental Management 78 (2006) 183–193; *D. Moran & S. Dann*, The Economic Value of Water Use: Implications for Implementing the Water Framework Directive in Scotland Journal of Environmental Management 87 (2008) 484–496

[52] Including the very first guidance document, European Commission (2003b) *Guidance document No. 1 Economics and the Environment: The implementation challenge of the Water Framework*

Member States to these aspects of the WFD, and calls for more attention to be given to both economics, and pricing policies.[53] Further, as we move through the second round of RBMPs, and into the third, the Commission will be looking for better and more substantiated use of the disproportionate costs grounds. To justify less stringent objectives, instead of exemptions, disproportionate costs will always have to be shown.

The requirement in Art.9 to recover the costs of water services is another controversial provision and the pricing provisions have been explored extensively in the legal literature.[54] Article 2 provides a broad definition of 'water services', but in the first round of RBMPs, most states took a narrower view, that cost recovery should apply only to urban 'piped' water.[55] Article 2 has been tested in the CJEU, in one of the first substantive actions under the WFD. In *European Commission v Federal Republic of Germany*,[56] the Court held that water services should indeed be given a broad definition; but, that states should still have significant discretion as to how they allocated and then recovered costs for any particular service. On the face of it, the Commission lost; they had not sufficiently specified Germany's failure to implement Article 9. For the Federal Republic of Germany, their established practices regarding some water-related activities, especially water for navigation and flood management, did not need to be subjected to full cost recovery as long as the Directive was being met in other ways. The importance of this decision cannot be underestimated, and is reflected in the fact that six other Member States, including the UK, were represented as intervenors. The states will have welcomed the wide discretion given to them; but overall, and over time, it is more significant that the broad definition of water services was upheld.

Whilst the Commission may be reluctant to bring another similar action in the near future, it should be remembered that defining water services very broadly, e.g. to include hydropower, or flood defence, has always been controversial.[57] But that is less true for agricultural water,

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Directive http://ec.europa.eu/environment/water/water-framework/facts_figures/guidance_docs_en.htm

[53] European Commission (2012b) A Blueprint to Safeguard Europe's Water Resources COM(2012)673 final; European Commission (2012c) REPORT on the Implementation of the Water Framework Directive (2000/60/EC) River Basin Management Plans COM(2012)670 final .

[54] See, e.g., *M. Reese* Cost Recovery and Water Pricing in Water Services and Water Uses in Germany JEEPL 10.4 (2013) 355–377*; P.E. Lindhout*, Application of the Cost Recovery Principle on Water Services in the Netherlands JEEPL 10.4 (2013) 309–332

[55] European Commission (2012a) supra note 45, section 8.15.3.

[56] *European Commission v Federal Republic of Germany* (2014) Case C-525/12.

[57] See, e.g., *Lindhout, supra* note 61.

for which, unlike urban water services, typically very low prices are paid and there is not cost recovery across the sector. Agriculture globally is by far the largest abstractor of water, and this is also true in the southern EU, using up to 80% of abstractions compared to an EU-wide average of 33%.[58] The pricing incentives in Article 9 should apply to agricultural users and this is one of the mechanisms that the WFD does provide to manage water quantity, along with a requirement to control water allocation through a system of authorisations.[59] The 2015 Implementation Report emphasises the need to recover the costs of agricultural water;[60] and this may be a vital tool to address both water scarcity and the impacts of climate change (section 4 below). Gawel has suggested that the Commission's approach to 'calculating' environment and resource costs has been unsuccessful and is inherently infeasible; rather, a more 'political' and pragmatic approach should be adopted as States justify their approaches.[61] That may be so, but still both the price of water, and the value of the resource, will remain high on the policy agenda.

3.6 Progress to date - Cases and Enforcement

The Commission regularly reviews the progress of directives, and the WFD is no exception;[62] some highlights may give an overview of progress and an indication of next steps. In 2012, across the whole EU, just 43% of waterbodies were at 'good' ecological status, and this was predicted to reach just 53% by 2015.[63] Unsurprisingly, this underpinned a conclusion that states lacked ambition in implementation. In 2015, the Commission noted that many states had planned measures around what was already anticipated, without reflecting enough on the status and pressures; and they had sought too many exemptions, without sufficient justification. The latter criticism will be harder to answer in relation to the second and third RBMPs.

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[58] European Environment Agency (2012) *Towards Efficient Use of Water Resources in Europe* EEA Report 1/2012 ISSN 1725-9177 section 2.1.1.
[59] WFD, supra note 1, Article 11(3)(e).
[60] European Commission (2015) The Water Framework Directive and the Floods Directive: Actions towards the 'good status' of EU water and to reduce flood risks COM(2015) 0120 final.
[61] *E. Gawel*, Article 9 of the EU Water Framework Directive: Do We Really Need to Calculate Environmental and Resource Costs? JEEPL 11(2014) 249-271.
[62] For links to all of these, see http://ec.europa.eu/environment/water/water-framework/impl_reports.htm. Each of these is underpinned by detailed Staff Working Documents, including country specific assessments.
[63] European Commission, 2012b, supra note 53.

In 2012 the Commission also provided an overview of legal action relative to the WFD,[64] including on the process, e.g. enforcement of the various deadlines; non-conformity of transposing legislation; and failure to lodge reports. But by 2012, substantive decisions were emerging. *European Commission v Federal Republic of Germany* (2014) has been discussed above. *Bund für Umwelt und Naturschutz Deutschland eV v Bundesrepublik Deutschland ('Weser')*[65] addressed an even more central question, as to what is deterioration, and therefore, what is covered by the first purpose of Article 1, and the first requirement of in Article 4, that there should be no deterioration of water status.

The Court in *Weser* held that firstly, a deterioration casued by a new project could only be permitted if there was a derogation approved under Article 4(7). The Court also held that deterioration in status was not limited to dropping a status class, but would include deterioration in any one of the elements that combine to define ecological status, and hence not permitted unless a derogation is applied. The 'weighing up' of the adverse effects of a development, as against the related economic costs, is relevant to Article 4(7) (and presumably, to the other grounds for exceptions), but not to the determination of deterioration. This significantly increases the obligations on those Member States who had considered 'status' to mean 'status class'; that was certainly the case in the UK jurisdictions. Further, Paloniitty argues that the decision clarifies that the Directive's objectives are objectives of result; and permits must not be granted for activities that contradict their achievement.[66]

So overall, progress is perhaps well-described as patchy. Implementation proceeds, but not necessarily as the Commission would like; and the difficult parts remain difficult. The third section of this paper will examine a selection of policy areas that are not, or not well, addressed.

4 What is missing, that should be included?

4.1 Floods and droughts and climate change.

[64] European Commission (2012d) European Overview (Vol.1) on the Implementation of the Water Framework Directive (2000/60/EC) River Basin Management Plans SWD(2012) 379 final section 6.
[65] *Bund für Umwelt und Naturschutz Deutschland eV v Bundesrepublik Deutschland ('Weser')* (2015) Case 461/13
[66] *T. Paloniitty*, The Weser Case: Case C-461/13 BUND v Germany, Journal of Environmental Law 2016 28, 151-168.

The Directive mentions flood and drought in Article 1, but does not specifically address either. A decision was taken during its inception to instead develop a separate Floods Directive.[67] This requires states to assess and map flood risk and plan for measures to manage the same, at river basin scale and over six year time frames. The process can (ideally, should) then be integrated with the WFD (especially, using the same RBDs and competent authorities).[68] The Floods Directive is very much a planning instrument, and does not place substantive binding obligations on Member States, but rather, process obligations.[69] It does however encourage innovative responses around natural flood management,[70] whereby States should focus on prevention and protection; take the characteristics of the river basin into account; and promote sustainable land use and improve water retention. In the Netherlands, whose global expertise in flood management is unrivalled, this approach is seen in the 'Room for the River' programme;[71] in Scotland, the transposing legislation for the Floods Directive drove this initiative by placing a duty on the Scottish Environment Protection Agency to identify 'natural features and characteristics' that could be used for flood management.[72]

Where there a 'hard' flood defence is constructed, it may have a negative impact on the WFD criteria, especially morphology. Where works may contribute to flood management but also achieve WFD gains, or biodiversity improvements, for example by re-meandering rivers, or expanding wetlands, this looks like a 'win-win', but these 'soft' green infrastructures are harder to cost and to value. The benefits (to urban areas downstream) and the costs (to land managers upstream) are not evenly distributed in time or space, and raise difficult questions similar to costing the measures under the RBMPs. Arguably, the two Directives should be brought together in 2019, though there is no indication this is likely.

In some ways the management of drought and scarcity is more problematic, as they are barely mentioned in the WFD beyond the Preamble and Purpose, and there is no specific legal instrument. As discussed above, when the Danube Convention was being adopted, the European Court of Justice held that the Community could act by qualified majority on

[67] Directive 2007/60/EC of the European Parliament and Council 23 October 2007 on the assessment and management of flood risks OJ L 288/27.
[68] Id, Article 1.
[69] On implementation, see e.g. outputs of the STARFloods project, http://www.starflood.eu/journal-articles/
[70] Floods Directive, supra note 67, Article 7.
[71] See https://www.ruimtevoorderivier.nl/english/
[72] Flood Risk Management (Scotland) Act 2009 asp.6 s.20.

matters affecting water quality; but on matters of water quantity, could only act with unanimous agreement.[73] As the Danube Treaty was principally on water quality, the Community could move without the agreement of Spain. Exactly the same argument applied to the WFD during its inception. So, although there are quantity measures, these could not be a main focus. Though at the time this enabled the WFD to be adopted, in the longer term the unfortunate result has been that the Commission has only been able to act on drought and scarcity through policy instruments; whilst at the same time, the southern states have been able to claim that the WFD does not reflect their difficulties.

In 2007, the communique on drought and scarcity[74] indicated a preference for demand management. Review in 2012 noted the under-recovery of costs for agricultural water and the need for more emphasis on efficiency, which could in part be achieved by greater conditionality of funding under the Common Agricultural Policy post-2013.[75] Less than a quarter of the first RBMPs had data on trends for demand or availability, and whilst effects on the water environment were identified, this was much less so for economic losses or social conflicts. Looking to the future, the Commission suggested that along with pricing, and economic incentives, other ways ahead would include better use of water balances and ecological flows; more landuse coordination; better use of green infrastructure and water reuse; and links to resilience and climate change adaptation.

In many ways, climate change is the 'elephant in the room' of the WFD. Always there, but never mentioned – at least not in the text. Keessen et al looked at implementation in the first RBMPs and asked regulators about climate change – often, it was not included, as the Directive did not so require.[76] In 2009 and 2012, and in 2015, the Commission noted that there was insufficient information about the impacts of climate change. Yet the impact for floods and drought will be huge, whilst both mitigation and adaptation for climate change will affect land use and water management. Green et al have noted that adaptive management under the WFD will improve resilience and be a tool to manage climate change,[77] and any

[73] *Kingdom of Spain v European Council* supra note 23.
[74] European Commission (2007) COMMUNICATION Addressing the challenge of water scarcity and droughts in the European Union COM(2007) 414 final.
[75] European Commission (2012e) Report on the Review of the European Water Scarcity and Droughts Policy SWD(2012) 380 final.
[76] *Keessen* et al, supra note 30.
[77] *O. Green* et al, EU Water Governance: Striking the Right Balance between Regulatory Flexibility and Enforcement? Ecology and Society 18(2) 10 http://dx.doi.org/10.5751/ES-05357-180210

revision to the Directive should recognise this explicitly. This would also provide a 'way in' for better management of drought and scarcity.

4.2 Land Use and Agriculture

Land use is inextricably linked to water management. Agriculture is the largest use of land in Europe[78] and a major sectoral user of water.[79] Agriculture is also a major source of impacts on water, especially diffuse pollution by nitrates and pesticides; the EU has had a Directive on Nitrates pollution since 1991,[80] as well as regulating pesticides.[81] Yet agri-pollution is still a major cause of failure to reach good status, as well as impacting on the cost of providing drinking water. The links between the Common Agricultural Policy and the WFD are not always well implemented: weaknesses and delays in the RBMPs have hindered integration; the cross-compliance mechanism has not been fully exploited; Member States' rural development plans do not always take account of the EU's water policy objectives; funding has been underused; and the 'polluter pays' principle has not been integrated.[82] This is not the place for an exhaustive analysis of the links between agriculture and water management, but whilst land use is not exactly missing from the WFD, the opportunity to properly integrate WFD objectives with better approaches to land use is still there.

4.3 Ecosystems and their Services

Land use, especially rural land use, is relevant to the management of flood (and drought) through green infrastructure. It is also at the core of an ecosystem approach. The WFD makes some mentions of 'ecosystems'; ecology was a theme and a driver from its very inception. The vulnerability of aquatic ecosystems is noted in the Preamble, as is the link between groundwater and terrestrial ecosystems. Protection of aquatic ecosystems is a purpose in Article 1. 'Ecological status' is defined in relation to the 'structure and functioning of aquatic ecosystems', and the concept is also relevant to the definitions around pollution (Article 2).

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[78] European Court of Auditors (2014) *Special Report Integration of EU water policy objectives with the CAP: a partial success* EN 2014/04.

[79] EEA 2012 supra note 57.

[80] Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources OJ L 375.

[81] European Parliament and Council (2009) Directive 2009/128/EC establishing a framework for Community action to achieve the sustainable use of pesticides OJ L 309/71; Regulation (EC) No 1107/2009 of the European Parliament and of the Council concerning the placing of plant protection products on the market, OJ L 309.

[82] European Court of Auditors (2014) supra note 78.

Annex II on characterisation requires Member States to identify bodies of groundwater on which either surface water or terrestrial ecosystems depend; Annex V uses the term when outlining the components of the status assessment. The Groundwater Directive[83] also makes provision around groundwater dependent ecosystems.

However there is no mention of 'ecosystem services' – the services that the natural environment provides, including provisioning services such as drinking water; cultural services such as recreational use; regulating services such as water purification.[84] The concept has been very widely examined, including by lawyers,[85] and has been analysed specifically in relation to the WFD.[86] It is linked to the 'ecosystem approach' which was developed under the UN Convention on Biological Diversity,[87] but the WFD was perhaps just a little early for the mainstreaming of ecosystem services as such. Yet the concept reflects trends in current environmental law, and is ideally suited to the WFD's implementation. It is increasingly seen as a policy tool, by which some of the more intangible, hard-to-value and long-term benefits of environmental protection can be built into to policy decisions by better reflecting the consequences of not accounting for the externalities. This is not the place to elaborate on the arguments for and against (for example, the anthropogenic emphasis, or that giving a monetary value to everything is not the best approach to natural resources).[88] But many ecosystem services depend on the water environment, and it might be a tool that would assist Member States with the difficult questions around disproportionate cost, making it clearer how, and why, these longer-term intangibles should be factored in. It would bring together land use and water management. And explicit use of the concept might help to bring

[83] European Parliament and Council (2006) Directive 2006/118/EC on the protection of groundwater against pollution and deterioration OJ L 372/19.
[84] *R. Costanza* et al, The Value of the World's Ecosystem Services and Natural Capital, Ecological Economics 1998 25(1) 3-15.
[85] *J.B. Ruhl, S. Kraft & C. Lant*, The Law and Policy of Ecosystem Services 2007 Island Press Washington DC.
[86] *K. Blackstock, J. Martin-Ortega & C. Spray*, Implementation of the European Water Framework Directive: What does taking an ecosystem services-based approach add? In Water Ecosystem Services: A Global Perspective (*J. Martin-Ortega* et al, eds.) 2014 CUP / IHP Series.
[87] United Nations *Convention on Biological Diversity* 1992 (UN) 31 ILM (1992) 818.
[88] See, e.g., *E. Barritt,* Conceptualising Stewardship in Environmental Law 26 Journal of Environmental Law 2014 26(1); *P. Burdon* (ed) Exploring Wild Law: The Philosophy of Earth Jurisprudence (2011) Wakefield Press.

the range of vital ecosystem services more to the attention of decision-makers, water users and the public at large.

5 Conclusions.

This article has sought to reflect on the WFD to date, to explore both some of its challenges to date, and some aspects of land-and-water management that are not well-reflected in its text. It recognises the difficulties of implementation, in the science and the policy. It has noted that the current structure for assessing ecosystem health does not reflect either the reality of global change in the Anthropocene, or new thinking around healthy ecosystems. It suggests that the linked questions of disproportionate costs, water pricing and assessing environmental and resource costs will continue to be an important part of the policy-type work to be done during the next decade.

It also argues that the approach to the derogations and exceptions has been overly-complex, and that the establishing the objective of 'good' status has only focused attention on those derogations, rather than avoiding deterioration and improving status. Whilst there are reasons to retain 'good status' as a norm, it will be desirable to revisit Annex V, but also remove the provision for AHMWBs, simplify the derogations and accept that a robust analysis of status, reflecting the developing science, is of more utility, and more achievable, than an overall obligation that states simply seek to avoid.

Looking forward to the Commission's review in 2019, the article suggests that whilst flood management has a framework in EU law, drought and scarcity, and climate change, need to be made explicit. The concept of ecosystem services, and an ecosystem approach, could also be explicit as a policy tool to fully integrate environmental and resource costs into water management. The concept could also assist with driving better integration of land and water management, not least through the funding mechanisms in the Common Agricultural Policy.

Arguably, here in the UK, we should not be concerned. Long before any review takes effect, we will have 'Brexited' the EU (and on Brexit, see Howarth's contribution to this issue). It is suggested that would be an erroneous view on several levels. Firstly, if Brexit proceeds but within the single market, the UK will still need to meet the EU acquis. Secondly, here in Scotland, it is possible that the Brexit process will lead to further constitutional upheaval. Thirdly, and much more importantly, it is to be hoped that Brexit will not lead to a

wholescale dismantling of EU environmental law, just as it is to be hoped that EU-wide, the 2019 review will improve, rather than reduce, the scope of the Directive. The core of the WFD is a process for river basin management; mapping, monitoring and bringing stakeholders round the table to decide on priorities for water use. As such, it is what every state should be doing to manage this essential resource. Further, given the investment in aquatic sciences and in water policy over the last twenty years, in or out of the EU, any forward-looking country would surely wish to keep and further develop the 'best of the rest' of the WFD – a holistic and integrated approach to water quantity and quality, and an emphasis on protecting the ecosystems on which all life depends.